United States Navy
SHIPBOARD ENVIRONMENTAL UPDATE
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Inside

Environmental-Management Info and Training: Keys to Your Ship's Success!

Are You Aware of All the Information and Training Resources Available?

MUCH INFORMATION AND TRAINING relating to shipboard environmental management is available to ships and Sailors. One-stop shopping, however, is hard to find. This article gives you a road map to help with your environmental-training needs.

So, Where Do I Go First?

The first place to look is the ***Navy Environmental and Natural Resources Program Manual (OPNAVINST 5090.1B CH2)***. Chapter 19 of this instruction identifies required awareness training and training requirements for shipboard waste streams, such as Personnel Qualification Standards (PQS) and formal courses.

In addition to Navy courses and PQS, environmental training resources include Organizational Training (OT), Web sites, videos, training manuals, and CD-ROMs. The Navy's "Virtual Schoolhouse" approach reaches large audiences and includes computer-based training (CBT), video-tele-training, and other multimedia instructional and distance-learning technologies. All these resources can be found via the Navy Shipboard Environmental Information Clearinghouse (SEIC) Web site at ***www.navyseic.com.*** Its Training page is an excellent Internet asset that consolidates most of your environmental-training resources in one handy location! From

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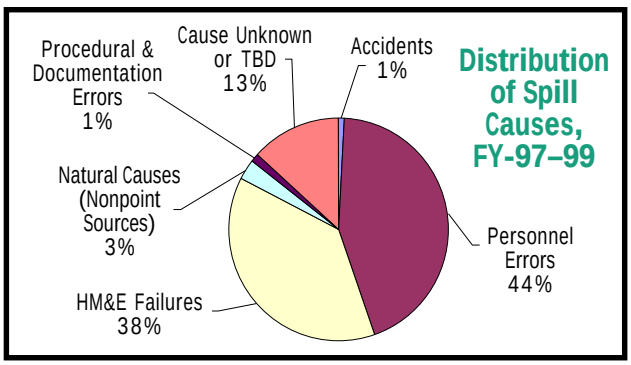
Navy Oil-Spill Prevention Initiatives

PREVENTING OIL SPILLS, REGARDLESS OF size, is a very high priority for the Navy. To accelerate the Fleet's efforts, the Naval Sea Systems Command (NAVSEA) began a comprehensive, multi-year, spill-prevention program in FY-00. The following initiatives were carefully developed to eliminate the primary causes of oil spills and reduce the risk of future spills.

- **Correcting and updating shipboard operating procedures;**
- **Implementing new spill-prevention and awareness training;**
- **Reviewing shipboard fuel, oil, and drainage system design;**
- **Correcting system and equipment technical documents;**
- **Recommending shipboard system design changes; and**
- **Installing improved valves, gaskets, pumps, and seals.**

The first two initiatives, updating the ***Engineering Operational Sequencing System (EOSS)*** and implementing training, address the causes of almost half of all the oil spills from ships (personnel and procedural errors), as shown in the chart below.



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FEATURE STORY: EDUCATION AND TRAINING

Training and Info Key to Your Ship's Success!

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this one page, you can link to all the following Navy Training Web sites: the ***Naval Occupational Safety and Health, and Environmental Training Center (NAVOSHENVTRACEN)***, Fleet Training Centers, Catalog of Navy Training Courses (CANTRAC), and the Shipboard Training Enhancement Program (STEP) homepage (see page 6). All are good places to find detailed course information.

NAVOSHENVTRACEN

In addition to classes in Norfolk and San Diego, NAVOSHENVTRACEN provides over 45 courses worldwide in major Navy homeports and at overseas locations. You can find information on its products at ***www.norva.navy.mil/navosh/*** or write or call:

Commanding Officer
Naval Occupational Safety and Health, and Environmental Training Center
9080 Breezy Point Crescent
Norfolk, VA 23511–3998
757.445.8778, DSN 565.8778

NAVOSHENVTRACEN has various materials to help realize the Navy's environmental training policy:

- **Annual Course Catalog** provides a complete list. For course details, visit www.norva.navy.mil/navosh/coinfo.htm or see the **CANTRAC**, NAVEDTRA 10500, at www.cnet.navy.mil/netpdtc/cantrac/.
- **NAVOSH Training Guide for Forces Afloat** (NAVEDTRA 10074-A) provides an effective and efficient way to meet afloat safety training goals defined in OPNAVINST 5100.19 (Series), NAVOSH Program Manual for Forces Afloat. The guide consolidates occupational health and safety subject matter into 20 generic presentations; two focus on hazardous materials (HAZMAT).
- **Environmental Protection Training Guide for Forces Afloat**, NAVEDTRA 10091, was updated recently and will soon be available on the NAVOSHETC and Fleet Websites and the Afloat Environmental Protection Coordinator (AEPC) Reference Library CD-ROM (see page 16).

Don't Miss: Training Talk Boxes in this Issue!

Because feedback from recent Fleet environmental conferences shows some ships are unaware of available environmental training, this issue of Shipboard Environmental Update is loaded with information on training specific to each type of waste! Check out the "Training Talk" boxes in the ozone-safe substances, solid-waste, liquid-waste, and P2/HAZMAT sections of this newsletter!

Afloat Environmental Courses

These NAVOSHETC courses are listed in the "Training Talk" boxes and also include:

- **AEPC** (CIN A-4J-0021)

Fleet Training Center Course

Oil Pollution Abatement (OPA) Equipment Operation and Maintenance (K-652-2196). Designed to train selected shipboard personnel in the safe operation and maintenance of OPA equipment. Visit www.ftcnorfolk.navy.mil/ or www.cnet.navy.mil/cnet/ftcsnd/index.html for details.

PQS Catalog

Specific afloat-environmental-related PQS are detailed in this newsletter's "Training Talk" boxes. Your PQS Coordinator can obtain the PQS Catalog in electronic computer file format from several sources:

- **PQS CD-ROM,** the entire inventory of effective PQS books that can be printed locally.
- **NETPDTC Website,** www.cnet.navy.mil/netpdtc/pqs/default.htm, has the latest version of the PQS Catalog. Download any effective PQS.

Organizational Training (OT)

OT informs deploying Fleet units and can be found in the Fleet Training Toolbox at ***www.fleettraining.navy.mil/***. Environmental OT includes topics such as these:

- **Environmental Compliance Indoctrination**
- **Several HAZMAT courses**
- **Shipboard Painting Safety**
- **Shipboard CHT**
- **Solid/Plastic Waste Disposal**

Afloat Environmental Training Websites

- Chief of Naval Education and Training (CNET): www.cnet.navy.mil/
- Naval Education and Training Professional Development and Technology Center (NETPDTC): www.cnet.navy.mil/netpdtc/
- NAVOSHETC: www.norva.navy.mil/NAVOSH/
- NAVSEA 00T, Environmental Protection, Occupational Safety & Health Programs: www.navsea.navy.mil/sea00tWWW/training/training.htm
- CNO Training: http://web.dandp.com/n45/n453/training/index.html
- The Navy Learning Network: http://209.177.213.140/docs/home.htm

Videos: An Effective Way to Provide Environmental Training

You can find listings of environmental training videos at the NAVOSHETC "Training Aids" and ***www.navyseic.com*** "Training" Web pages. Order all DON training videos through the Defense Automated Visual Information System/Defense Instructional Technology Information System (DAVIS/DITIS) Website, ***http://dodimagery.afis.osd.mil/dodimagery/davis***.

Following are the available videos that are not mentioned in "Training Talk" boxes throughout this newsletter:

Video Titles (PINs)

- Your Ship, The Environment, and You (806435)
- The Navy's Environmental Partnership: Forward From the Sea (805958)
- You & The Navy: Partnership for a Better Environment (805686)
- Management of Medical Waste Afloat (805974)
- The U.S. Navy and Protection of Right Whales in the Southeastern U.S. (806220)
- Protecting the Whales… a U.S. Navy Environmental Preservation Initiative (and User's Guide) (806436)

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Celebrate Navy Earth Day 2001 at DC's Navy Memorial, to Focus on New Technology for a Clean Environment

The Navy will celebrate Earth Day 2001 at the U.S. Navy Memorial, 701 Pennsylvania Avenue, NW, Washington, DC, on ***Wednesday, 18 April***, 1000—1400, with displays, a concert, and other outdoor events. The event is expected to attract thousands of families and school children that will be in the Nation's capitol for spring break. (***Rain date: 19 April***.) This year's theme: "New Technology for a Clean Environment."

"We've had some real successes in preventing pollution and protecting Earth's oceans," said ***Rear Admiral Larry C. Baucom***, Director of the CNO's Environmental Protection, Safety and Occupational Health Division (N45). "Sailors, Navy civilians, and their families will be celebrating Earth Day with highway, beach, shore, and river cleanups. They'll be planting trees and restoring wildlife habitats. The Navy and its people are committed to protecting the environment at sea and ashore. This celebration is a great way to let people know what we're doing." The Navy Earth Day 2001 celebration will include environmental displays from many Navy and Marine Corps organizations. Participants:

- CNO Environmental Protection, Safety, & Occupational Health Division
- CNO Recycling and Solid Waste Program
- Secretary of the Navy Installations & Environment Division
- Naval Facilities Engineering Command
- Naval Sea Systems Command
- Naval Air Systems Command
- Navy Recruiting
- Marine Corps Environmental Division
- Marine Corps Recruiting
- Naval District Washington
- Ship and Air Systems/P2 Afloat
- Navy Salvage and Diving
- Naval Atlantic Meteorology & Oceanography Center

The Navy's alternative-fueled vehicles, activities for children, a visit by EQ Pelican (Navy's environmental-quality mascot), displays highlighting Navy environmental programs, and a midday concert by the Commodores (Navy Band's jazz ensemble) will round-out the day's events. Top Navy officials will talk about the Navy's environmental programs.

A press release about this event is posted at ***http://web.dandp.com/n45/EarthDay2001.html***. And ***www.earthday.net*** lists this and many other events.

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Baffled by a plethora of acronyms? See page 17 for Alphabet Soup for Non-Navy Types, a quick-reference glossary to help guide you through this newsletter!

We're Here to Help

Technical Assistance and Advisories

As a result of the 2000 Fleet conferences, the Navy has renewed efforts to make POCs more available to the Fleet so that ships know whom to call. If you want your ship's solid-waste equipment to work well, advisories are available on the new AEPC CD (see related story on page 16).

Also, NSWCCD-SSES Code 631 has representatives ("reps") on site in Norfolk and San Diego, who perform installation verification inspections, provide technical assistance on pulper and metal/glass shredder installations during the warranty period.

In addition to supporting solid-waste equipment, the Code 631 reps are training ship's force on how to use new P2 Afloat equipment being installed throughout the Fleet over the next several years (see related article on page 12). For PWP equipment, FTSC is providing PWP technical assistance.

- **In Norfolk**, you can call NSWCCD-SSES rep **Mr. Keith Stinnette** at 757.444.3872 x1331 or FTSCLANT rep **Mr. Stanley Ward** at 757.444.3872 x1371.
- **In San Diego**, call NSWCCD-SSES rep **Mr. John Fox** at 619.556.0713 or FTSCLANT rep Mr. Jerry Donahue 619.556.2595.
- **If you are unable to contact the NSWCCD on-site reps**, call **Mr. Martin Cohen** at 215.897.1064 (DSN prefix 443).

Who's New in the ODS-Refrigerant Elimination Program?

Now You Have One-Stop Shopping in Philadelphia

The ODS-Refrigerant Elimination Program has seen many personnel changes over the last several months. Also, the functions of the Annapolis Laboratory of Naval Surface Warfare Center, Carderock Division (NSWCCD), which was closed under Base Realignment and Closures (BRAC), have been transferred to NSWCCD-Ship Systems Engineering Station (SSES) Philadelphia. Here is the revised POC list to assist the Fleet:

- **NAVSEA Program Manager:** Mr. Greg Toms, SEA 05L12, 202.781.3653, tomsgs@navsea.navy.mil
- **Technical Manager/Life-Cycle Manager:** Mr. Mike McGovern, NSWCCD-SSES 9213, 215.897.7213, mcgovernmp@nswccd.navy.mil
- **AIT Installation Manager:** Mr. Skip DiFelice, NSWCCD-SSES 9153, 215.897.1737, difeliceaj@nswccd.navy.mil
- **RDT&E Manager:** Mr. Matt Frank, NSWCCD-SSES 822, 215.897.7024, frankm@nswccd.navy.mil

Congratulations, ODS-Elimination Team Award Winners!

The ODS-Elimination Team has been selected for the NAVSEA FY-00 Environmental Award in the category "Pollution Prevention: Individual/Team." This award is the result of many years of hard work by many people. To see which ships won the CNO and SECNAV Environmental Awards for 2000, turn to page 15!

MACHALT of the Moment

New Refrigerant Leak Monitor MACHALT Is Final

Machinery Alteration (MACHALT) FECP-559 to install a new, state-of-the-art refrigerant-leak monitor is now official. Manufactured by Parasense, Inc., the new monitor not only replaces existing halocarbon monitors, it also will be added to other locations, where large amounts of refrigerant are used but where no leak monitors exist. Because the new monitor applies to all surface ships and detects all old and new refrigerants, the Navy plans to do the MACHALT before or during the CFC-conversion ship alterations (SHIPALTs).

The prototype for this MACHALT was successfully accomplished on board the USS *Laboon* (DDG-58) while its AC&R plants were converted to R-134a and R-236fa (see related article on page 5). As a result, all major AC&R equipment on board is now monitored for leakage. In addition to providing an alarm for large leaks where safety of personnel is at risk, the new monitor allows ship's force to know the time, location, and severity of smaller leaks, thus acting as a cost-saving tool.

Unlike the old monitor, the new monitor senses leaks from multiple locations and contains modular parts for easy maintenance. The new MACHALT will be installed over the next several years. Until then, ships must maintain their old halocarbon monitors, of which the Naval Inventory Control Point (NAVICP) has a rotatable pool and has set up a turn-in program for all repair and conversion services.

▲ **The SEIC's Mr. Pete Mullenhard checks out the new monitor on the USS Laboon (DDG-58)**

- **Your ISEA POC for the new monitor:** Mr. Jim Winward, NSWCCD-SSES Code 9213, 215.897.8783, DSN 443.8783
- **Your NAVICP POC for the rotatable pool of existing (old) Foxboro leak monitors:** Ms. Anne Lehmer, DSN 430.3190
- **Your MACHALT-installation manager POC:** Mr. Joe Amadoro, DSN 443.7274

Training Talk for Refrigerant & Halon Technicians

STEP Course from STEP Disk 10, which covers Course Overview, Halon Systems and Components, Halon Safety, and Maintenance Procedures, has a comprehensive post-test. Identifies differences in system components and the importance of following maintenance procedures to maintain system readiness and avoid accidental discharge of Halon:

- Halon Systems Readiness

Videos (PINs)

- The Navy's Search for Alternatives to Ozone-Depleting Chemicals (806032)
- Alternatives to Ozone-Depleting Substances (806020)
- Operation and Maintenance of the ST-100A and ST-1000 Refrigerant Recovery Units (806024)
- Operation of the U.S. Navy Trailer-Stowed Refrigerant Recovery Unit (806025)
- Environmental Protection Agency (EPA) Certification Training for Air-Conditioning and Refrigeration Technicians (806031)
- Halocarbon (Refrigerant) Monitor Familiarization (806230)

CFC Conversion Update: First CFC-Free DDG-51-Class Ship!

THE USS *LABOON* (DDG-58) BECAME the Navy's first CFC-free DDG-51-Class ship in late December 2000. Under NAVSEA's CFC Refrigerant Conversion Program, the *Laboon* received the first CFC-114 to HFC-236fa AC conversion to be conducted on a DDG-51-Class ship. In addition, the *Laboon*'s two refrigeration plants were converted from CFC-12 to HFC-134a and new refrigerant leak monitors were installed (See related article on page 4).

▲NAVSEA ODS Elimination Team members on board the USS Laboon (DDG-58) review the conversions

This conversion brings the total number of CFC-114-free ships up to eight. Another five ships are now being converted or scheduled for HFC-236fa conversions during FY-01. Under the current schedule, all surface ships with CFC-114 AC plants will receive the HFC-236fa conversions between now and 2013.

Not only do they eliminate the Navy's dependence on CFC-114 refrigerant no longer in production, the HFC-236fa conversions improve the performance of the AC plants by reducing structure-borne noise, increasing efficiency (reducing operating costs and increasing range), increasing cooling capacity by as much as 25 percent at seawater temperatures above 88 degrees F, increasing reliability, simplifying maintenance and operation with a new universal microprocessor control system, and providing the capability to add future enhancements for reduced manning. Converting the *Laboon*'s refrigeration plants from CFC-12 to HFC-134a also adds it to the list of ***more than 180 ships that are now CFC-12-free***. By the end of this fiscal year the CFC-12 conversion program will be more than 75-percent done, well on its way to completion by FY-05.

▲Mr. Joe DiDomenic (left) and Mr. Dan DiVigenze of NSWCCD-SSES Code 9153 look at the new microprocessor-control panel on AC plant #2 aboard the USS Laboon (DDG-58)

Most of these conversions (both HFC-236fa and HFC-134a) are being conducted by NSWCCD-SSES Alteration Installation Teams (AITs).

Your POC for information on CFC conversions: Mr. Skip DiFelice, NSWCCD-SSES Code 9153, 215.897.1737, difeliceaj@nswccd.navy.mil

NAVSEA Makes New Home at the Washington Navy Yard

NAVSEA, THE LARGEST OF THE NAVY'S five systems commands, recently began moving 4,100 of its 46,000 employees into its new headquarters at the historic Washington Navy Yard buildings that have been converted into a modern office center. (Historical events that occurred at the yard include visits by President Lincoln during the Civil War and Charles Lindbergh's debarkation after his 1927 solo flight across the Atlantic.)

Until now, NAVSEA's headquarters were in several leased buildings at the Crystal City complex in Arlington, VA. See page 18 for the new contact information for SEA 05L, Environmental Programs.

Military-Specifications Updates Remove More ODS References

BB-F-1421, Revision B, was cancelled by Notice 1, 11 September 1996, and is superseded by A-A-58060 for future acquisitions.

DOD-L-24574 was cancelled and made into Performance Specification DOD-PRF-24574.

MIL-G-24139, Revision A, was cancelled and made into Performance Specification MIL-PRF-24139.

MIL-S-14195, Revision A, is made inactive by Notice 3, dated 13 July 1999.

MIL-STD-1359, Revision B, was cancelled by Notice 1, 20 September 1999, and is not superseded by another document. Future acquisition for this item should refer to SAE-AS13591, "Cleaning Methods and Procedures for Breathing Oxygen Equipment."

Feature Story: Education and Training

Training and Info Key to Your Ship's Success!

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Other Training Tools

- **FY-01/02 Navy Environmental Training Wheel**. A user-friendly tool for personnel in identifying environmental training; includes both afloat and ashore information, the AEPC course, and Afloat HAZMAT courses. From the Navy's Environmental and Natural Resources Training Program Ashore Working Group. For copies or information, contact Ms. Kathleen Roos at NAVFACENGCOM, 805.982.6531, *roosks@cecos.navy.mil*.
- **AEPC Reference Library CD**. Provides environmental references, videos, and information on one CD-ROM. See page *16* for details!

Do You Know What Courses Are Available on Your STEP CD?

STEP is a technology-based Interactive Multimedia (IMI) courseware program that delivers training to sailors at their worksites. The afloat-environmental-related STEP course that is not mentioned in a "Training Talk" box in this issue of the newsletter: **NAVSEA Job Qualification Requirements (JQR) IMI, Version 2.5 of 1 March 2000**.

To get on distribution or see the entire STEP course listings, visit the STEP homepage at ***www.cnet.navy.mil/netpdtc/step/index.html*** or write or call:

Naval Education and Training Professional Development and Technology Center
ATTN: STEP POC
6490 Saufley Field Road
Pensacola, FL 32509–5239
850.452.1001 x2036
DSN 922.1001 x2036
Fax: 850.452.1136

Management Tips for Your Ship

- **Instill team spirit and pride.** Here's a morale booster for your crew: Name your ship's solid-waste machines and even hold a T-shirt design contest. ***Radioman First Class (RM1) John R. "Johnny" Green*** and his waste-handling crew aboard the USS *Tarawa* (LHA-1) affectionately renamed their large solid-waste processing room, a potentially nice, clean environment, the "Tarawa City Dump." The large pulper became "Fat Albert" (an idea Green got from the TV cartoon "South Park"). Green's "Environmental Necessities Management (ENEMA)" program worked like magic on the *Tarawa* in 1999. "The guys want the City Dump job; they want to leave their mess [job] and they ask me, 'Would you pull some strings and let me work for you?'" Why? "High morale in my division. Taking care of your people." Johnny Green added, "It's a good trick to make a job fun for others… it's easier to catch flies with honey than vinegar."
- **Have your crew start a log.** List, for example, what goes into the pulper and what the ship needs for process improvement. Examples from the *Tarawa* log: wooden clothespins; proper PPE; towel rack; step stool for Fat Albert's high "lower lip;" hearing protection ("a box of ear plugs"); and leather gloves.
- **Include the backpacker's rule in your environmental psychology.** Leave a campsite the way you found it (and try not to add to our oceans' pollution).

Training Talk: Solid Waste

STEP Courses (CINs) *from STEP Disk 1, which covers general functionality, safety, operation, maintenance, and troubleshooting of the small and large pulpers and the PWP:*

- Large Pulper Operations (A-690-0001)
- Large Pulper Maintenance (A-690-0004)
- Small Pulper Operations (A-690-0002)
  Small Pulper Maintenance (A-690-0005)
- PWP Commercial Operations (A-690-0003)
- PWP Commercial Maintenance (A-690-0007)
- PWP Military Operations (A-690-0006)
- PWP Military Maintenance (A-690-0008)

STEP Courses (CINs) *from STEP Disk 9, which covers distinct aspects of operation and maintenance:*

- Solid-Waste Shredder Metal-and-Glass Operation (A-690-0010)
- Solid-Waste Shredder Metal-and-Glass Maintenance (A-690-0009)

PQS

- Incinerator Operator (43558)

Videos (PINs)

- War on Pollution: The U.S. Navy's New Weapon to Fight Plastics Pollution at Sea (806433)
- War on Pollution II: Pulpers and Shredders, the U.S. Navy's Newest Weapons to Fight Solid Waste Pollution at Sea (806434)

Success Stories

Solid-Waste Equipment Problem Solvers

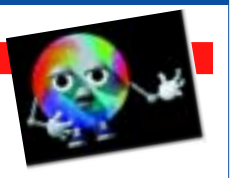
Problem: *We've had motor failures reported on our PWP compress-melt unit (CMU).*
Solution: Most reported motor failures are actually **jammed-ram conditions** (see next problem) or brake failures because of water intrusion that causes the drive system to freeze. The entire motor and brake assemblies are being replaced as a unit because the motor and brake are keyed together and it is beyond the capability of ship's force to separate the units. Order a **new motor/brake assembly** (NSN 9G6105-01-480-6082) on APL 439990247, available to ships as free issue via the Re-engineered Residual Assets Management (RRAM) system if a brake failure is confirmed. Before ordering a new motor and brake assembly, be sure to lift and clean the ram as indicated below and perform the system-troubleshooting procedures (outlined in Table 5-1 under problem messages 46, 47, 48, or 49 of the Plastics Processor Technical Manual), as there are several other less costly and easy-to-correct causes for a frozen drive system.

Problem: *Our PWP CMU message display is reporting a ram "jammed" condition (messages 46, 47, 48, or 49).*
Solution: A **ram jam** that occurs every 80 to 120 cycles, considered normal, is caused by the slow buildup of plastic "flashing" around the ram. If this occurs, lift and clean the ram in accordance with (IAW) MRC C3QA-N. More frequent jams are normally a result of **lack of daily cleaning** IAW MRC 28 C3PX or failure to do lay-up maintenance in accordance with MRC 28 C3QD-N.

General Tip: Make sure you review *NSWCCD-SSES PWP Lessons Learned Fleet Advisories*. You can get copies of the latest, No. 00-7 (NAVSURFWARCENSHIPSYSENGSTA PHILADELPHIA PA 221530Z JUN 00), from the Clearinghouse by calling 703.416.1132.

☛ Still have problems? Call the In-Service Engineering Agent (ISEA) representative, ***Mr. Martin Cohen***, at 215.897.1064.

Plastics Waste Processor Will Be Leaner, Meaner, and Cleaner



The Plastics Waste Processor (PWP) program was a rousing success, right? After all, no plastics waste is being discharged from Navy ships, marine life is better protected, and the Navy finished installing PWPs by December 1998, as mandated by Congress. ***So why is there so much grumbling in the Fleet about the equipment?*** The answer seems to be cost: in dollars, man-hours, and quality of shipboard life.

The task of processing plastic waste is noble, but *extremely* dirty. An estimated 670,000 man-hours a year are spent on Navy ships handling plastic waste, man-hours Sailors would rather spend performing mission-critical duties. The urgency of the PWP development and installation schedule imposed by Congress prevented key design issues from being adequately addressed. NAVSEA, therefore, has initiated a program to increase the plastics-processing rate, simplify the daily cleaning process, and improve reliability.

The plastics-processing rate will double, cutting in half the man-hours spent processing plastics. Currently, each CMU must operate about 1 hour to process 10 pounds. This will increase to more than 20 pounds per hour. How? By increasing the disk weight and "souping up" the cook cycle with the following changes:

▲ **Land-based testing with granulated plastic waste**

★ **Increasing the weight of each disk** by reducing the average particle size of the plastic placed into the CMU. Basically, it will be ground up into confetti to allow more plastic to be put into the CMU chamber for each cycle. Technology already commonplace in private industry for granulating plastics will be used in a new shredding chamber, which will replace the existing chamber on the Navy plastics shredder.

★ **Speeding up the cook cycle** with zero warmup, a faster ram drive system, and direct seawater for cooling at much higher flow rates, by:
- → Eliminating the warm-up cycle with both software changes and alternate chamber materials (a material with a low coefficient of thermal expansion will need no warming up to prevent it from binding with the ram);
- → Increasing the traverse speed of the ram by replacing the motor, brake, reduction gear, and ball/screw actuator with a faster, single-component linear actuator; and
- → Cutting cooling time with direct seawater cooling by eliminating efficiency losses from the current closed-loop-cooling unit heat exchanger.

Less obvious than the operational labor savings from a higher processing rate are the collateral effects of less maintenance. That is, several Planned Maintenance System (PMS) actions are triggered by the amount of disks produced or by equipment conditions that depend on how much the equipment is used. Processing half the disks per day means that these procedures have to be performed only half as often. And the system should break down half as often. This improvement, however, will be compounded by changes designed specifically to improve maintenance:

★ **Reducing daily cleaning from 1 hour to less than 20 minutes.** With the current design (system of compression springs and the springs), supporting structures significantly complicate the cleaning process because they are exactly

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Medical-Waste Processor R&D Update

SHIP SURVEYS CONDUCTED IN 1997 INDICATED that because of inadequate treatment equipment and insufficient storage space, many ships find it hard to comply with the Navy's guidance for managing shipboard medical waste. To tackle this problem, NAVSEA initiated the Shipboard Medical Waste RDT&E program to explore existing technologies for handling and treating shipboard medical waste. The goal: to identify, evaluate, and transition to the Fleet commercially available systems to process shipboard medical waste.

▲**OCCIGERM 12 medical-waste processor**

NSWCCD conducted an industry survey to identify existing medical-waste processing technologies and equipment that would facilitate treatment and storage aboard ship. Manufacturers provided basic information about their equipment that Navy engineers used to evaluate suitability for shipboard application.

The ***OCCIGERM 12 medical-waste processor***, an autoclave/compaction unit designed and manufactured by OCCIGERM of Avignon, France, was ranked as the top system for medium- to large-platform ships, based on its sterilization capability, compact size, inexpensive procurement cost, and ability to reduce the waste volume and render it unrecognizable.

In addition to sterilizing the waste, the OCCIGERM 12 achieves an ***80-percent or greater volume reduction of infectious medical waste***, significantly reducing the space required for stowing the waste aboard ship during deployments. The unit also has a small footprint: 16 inches wide by 24 inches deep by 36 inches high. Infectious medical waste, including soft wastes and sharps in sharps containers, is placed in an OCCIGERM bag and into the processing chamber. The hydraulic ram compacts the waste and autoclave conditions are achieved with the water present in the waste, producing a sterilized, cylindrical, nearly-dry disk. The total process time is 3 to 3.5 hours, depending on the amount and type of waste.

The OCCIGERM 12 was installed recently on the USS *Bataan* (LHD-5) for a 6-month technical evaluation. Although the system performed satisfactorily, subsequent equipment modifications to improve reliability necessitated more shipboard evaluations of the modified system. An evaluation is under way on board the USS *Enterprise* (CVN-65). Current plans are to start installing the OCCIGERM 12 in the Fleet in FY-02.

During this FY, NSWCCD plans to obtain for laboratory evaluation an OCCIGERM 60, which has a processing chamber five times the size of the OCCIGERM 12 and can process the waste in about the same time.

☛**Your NSWCCD POC:** Ms. Claudia W. Covell, Project Manager, P2 and Material Safety Branch, Code 632, NSWCCD, 301.227.5225, covellcw@nswccd.navy.mil

☛**Your BUMED POC:** LCDR D. Baker, BUMED 222, Technical Advisor, Fleet Liaison for NAVSEA 05L5, 202.781.3611, bakerd@navsea.navy.mil (until 20 April); or LCDR Dexter Hardy (after 20 April)

PWP Improvements Make Plastic Processing Cleaner

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where extruded food waste accumulates. The area is very difficult to access. A pneumatic actuator will need no compression springs to apply pressure to the plastic; therefore, the CMU can be modified to direct the flow of residual food waste to the deck or a drip pan, where it can be cleaned easily. A chamber made of an alternate material (either a plastic composite or stainless steel) will eliminate the need for the chamber heater/cooler assemblies, with their attached cables and hoses, and, therefore, will no longer collect waste and impede cleaning. Spray nozzles will be permanently mounted to the inside of the CMU chamber, below the ram, making the CMU practically self-cleaning!

★ **Improving reliability by eliminating many parts**, including the chamber heater/cooler assemblies and the entire cooling unit. An alternate drive system will eliminate the ball/screw actuator and the motor/brake assembly, all of which have had repeated failures in the Fleet directly related to the extra load placed on the drive components after waste accumulates. Four limit switches that frequently jam, or are forced out of adjustment because of accumulated food waste, will also be eliminated. The Resistance Temperature Detectors will be replaced by more reliable thermostatic switches. ***Overall, the CMU/cooling-unit parts count will be reduced by about 44 percent!***

The improved system will fit onto existing foundations and interface with ships' services, exactly the way the PWP does now. That is, the alterations, when implemented, will simply require swapping out old CMUs and shredders and replacing them with new ones, probably via the MACHALT program, minimizing the inconvenience to ships' forces. The current program plan calls for extensive shipboard testing to be completed in FY-02, with the first systems appearing on ships in the first quarter of FY-03. All the improvements cited above are still in development, but preliminary tests conducted so far have shown that the improved PWP will indeed be leaner, meaner, and cleaner.

Oil-Spill Prevention Initiatives

continued from page 1

Updating and correcting EOSS addresses the spills caused by procedural errors, valve misalignment, and improper tank-level monitoring. To accomplish this, engineers from NAVSEA Philadelphia will visit each ship in the Fleet to evaluate existing EOSS and documents and perform detailed hand-over-hand system layout checks. NAVSEA will then develop component discrepancy lists and incorporate corrections and new oil-spill-prevention measures into the EOSS and system diagrammatics. After completed EOSS packages are delivered to the ships, NAVSEA engineers will meet with the ship to explain and review the new package.

To date, ***NAVSEA Philadelphia has checked over 35 ships, including 3 aircraft carriers, and delivered 20 updated EOSS packages***. The plan is to complete ship checks and deliver completed EOSS packages to every ship by the end of FY-04. This effort is crucial to the Navy's effort to prevent oil spills, and the cooperation of the ships' forces will assist the NAVSEA teams.

Supplementing the EOSS updates is the training initiative (see the "Oil-Spill Training Package" article below). Better training and increased awareness should greatly reduce personnel errors and prevent oil spills from occurring.

To provide more spill prevention and protection, NAVSEA also is performing ***detailed system-design reviews*** and revisions to pertinent technical and administrative documents. Like the EOSS update, this effort should be completed by the end of FY-04.

NAVSEA has already started improving hardware, by identifying new and improved eductor valves, seals, gaskets, packing, and "canned" pump technologies. Installing and implementing these new technologies into the Fleet supply chain will be phased in over the next 2 years.

☛ **Your NAVSEA POC:** Mr. Lloyd Nilsen (SEA 05L32), 202.781.3641.

☛ **Your NAVFAC POC:** Mr. Andrew Del Collo, 202.685.9173, DSN 325.9173, DelColloA@navfac.navy.mil

Guide for Oil-Spill-Contingency Plans Now Available for Ships!

SHIPS CAN NOW EASILY PREPARE THEIR own Shipboard Oil-Spill-Contingency Plans (SOSCPs) by using a guide developed by the NSWC for the CNO. Using the guide, each ship can generate an SOSCP tailored to its own organization, mission, oil-pollution risk, and Fleet and Type Commander (TYCOM) instructions, and comply with the Spill Contingency Plan (SCP) requirements of OPNAVINST 5090.1B, the Navy Environmental and Natural Resources Program Manual.

☛ For copies of the guide, contact the Clearinghouse or Mr. Carlos Cruz at ***cruzca@nswccd.navy.mil.***

A New Three-Part Oil-Spill Training Package for Each Navy Ship!

TYCOMs to Distribute Items; EOSS Web Site to Distribute Electronic Files

WITH THE STRONG SUPPORT OF THE San Diego Regional Oil Spill Working Group (ROSWG), the Navy will have a new oil-spill-prevention awareness package on each ship, revisions of some of the 33 PQS for shipboard positions involved in operations that can cause spills, and a prototype system-specific CBT for the Fleet.

New Oil-Spill Awareness Video

Copies of a new general (not class- or ship-specific) video will be distributed via TYCOMs.

Lesson Plan, Presentation

A lesson plan and briefing slides, which complement the video to help ships use the video as part of a structured class, will be distributed via the EOSS Website, operated by NAVSEA Philadelphia SSES, at homepage ***http://eoss.navsses.navy.mil/.*** (Call ***Mr. Walter Rauf*** at 215.897.7217 for a more specific URL and simply link to the page with the files.)

Awareness CBT

This final component of the shipboard training package works with the video, lesson plan, and slides to give ships flexibility in providing awareness training. The Awareness CBT provides an alternative for individual training sessions for those who miss the group training or need remedial training between group sessions. To be completed this summer, the CD will be distributed via TYCOMs.

Refueling an aircraft carrier ▶

PQS Revisions

To institutionalize oil-spill prevention, the San Diego ROSWG will lead the effort to add oil-spill prevention and response factors to all or some of the 33 PQS applicable to shipboard assignments involved in operations that can lead to a spill. Work with Commander, Naval Education and Training (CNET) is under way, and the PQS revisions will be part of their annual review.

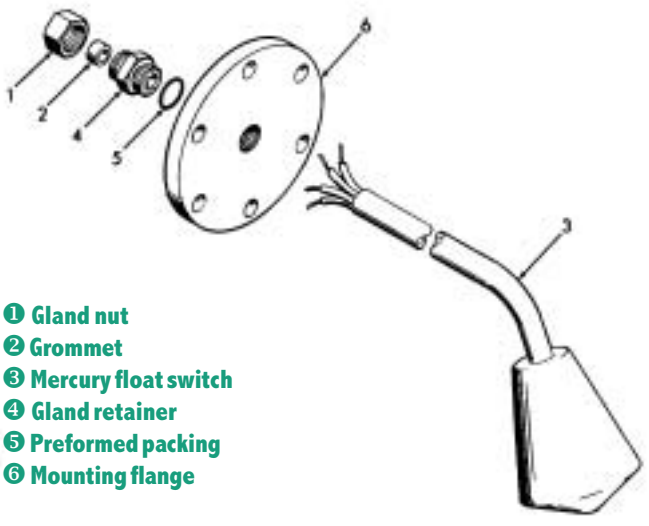
☛ **Your POC:** Mr. Andy Del Collo, NAVFAC R&D Program Manager, 202.685.9173, DSN 325.9173, DelColloA@navfac.navy.mil

New Level Sensor Approved for Sewage Tanks

A NEW LEVEL SENSOR FOR SHIPBOARD SANitary tanks promises a service life at least twice that of existing sensors for use in sanitary tanks where the level sensors (installed through tank-side flanged openings) will better protect sanitary system equipment from damage, and will prevent sewage overflows that result in health risks for personnel or environmental-compliance issues for the Navy.

What Is a Level Sensor?

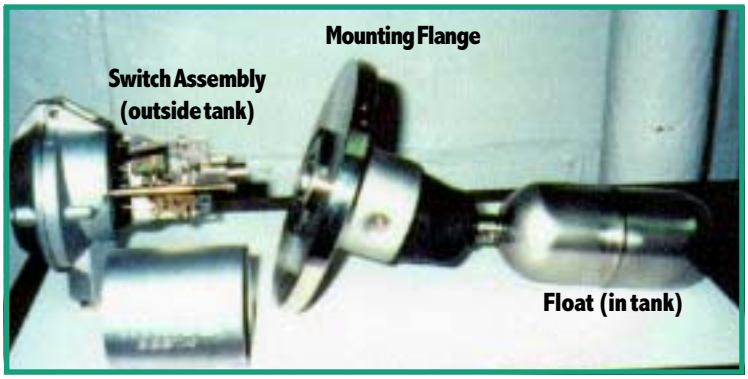
Naval ships use tanks to hold all sanitary waste (sewage or blackwater) during transits through restricted waters or when pierside. Many of these tanks have flanged level sensors that control automatic operation of sewage-transfer pumps and tank alarms. Each tank is normally outfitted with five level sensors, located at the following tank levels: *10-percent tank capacity* (low- level alarm, not all systems have this sensor), *15 percent* (duty and standby pump cutoff), *30 percent* (duty pump cut-in), *60 percent* (standby pump cut-in), and *85 percent* (high-level alarm). The sewage tank level sensor on most Navy ships is a mercury float switch (a polyurethane, tear-shaped float attached to a 5–6-inch-long double-insulated cable), depicted in **Figure 1**.



▲ **Figure 1. Mercury Float Level Sensor**

Old Problems: Expense, HAZMAT Compliance Issues, Health and Safety Risks, and Overflows

In recent years, the mercury float level sensor has become prone to failure in the harsh environment of the sewage tank, and has a short service life, averaging 18 months. Failed sensors, therefore, must be replaced outside normal tank maintenance cycles (36 to 48 months). Because opening a sanitary tank requires significant effort to clean and gas-free the tank properly, replacing the mercury float level sensor so often is ***expensive***. In addition, the mercury inside is a hazardous material that must be disposed of in accordance with applicable local, State, and Federal ***environmental regulations***. Replacing a failed level sensor also presents ***health and safety risks*** to maintenance activity personnel or Ship's Force, who must open the sewage tank, risking contracting diseases such as hepatitis A, dysentery, or cholera. Also, opening sewage tanks can expose personnel to toxic gases, such as hydrogen sulfide, methane, carbon monoxide, and carbon dioxide. Failed mercury float level sensors also can cause ***equipment damage or sewage overflows***. Failed pump cutoff level sensors can cause sewage-transfer pumps to cavitate or overrun, resulting in significant damage to the pump. Failure of other level sensors can cause the sewage tank to overflow either inside or outside the ship, creating a potentially dangerous situation on board or an environmental-compliance problem for the crew.



▲ **Figure 2. BESTA TriMod Level Sensor**

The Right Sensor

The BESTA TriMod (see **Figure 2**) was tested on the USS *Thomas S. Gates* (CG-51) for 36 months without failure. Much more reliable than the mercury float level sensor, the BESTA TriMod's electronics are located outside the tank, so there is no need to open a sewage tank to replace a failed sensor. Only the sensor's float (stainless steel) is located inside the tank. NSWCCD is now finalizing a MACHALT to transition the BESTA TriMod level sensor to the Fleet. These switches will also be included in specifications for new-ship construction programs.

For sanitary tanks where the level sensors are *not* installed through tank-side flanges (non-flanged sensors), NSWCCD is evaluating alternative level sensors. A future article in ***Shipboard Environmental Update*** will discuss the evaluation results.

Your POC: Mr. Isaac Lora-Guzman, NSWCCD Code 631, 215.897.8295, DSN 443.8295, loraguzmani@nswccd.navy.mil

UNDS Update

UNDS Website Has a New Look, Address

Check it Out at http://unds.bah.com

DOD (with Navy as lead), EPA, and the Coast Guard are leading an effort to develop national standards for controlling discharges from Armed Forces vessels. ***Uniform National Discharge Standards (UNDS)*** will enhance the protection of our harbors and coastal areas by standardizing discharge control practices on vessels of the Armed Forces. The new and improved UNDS Web site provides an overview of the program requirements, technical approaches, and outreach efforts.

Navy Developing Copper-Free Paints to Improve Marine Environment

NAVSEA's Materials Engineering Directorate is developing underwater hull paints that will reduce or eliminate the release of copper from the underwater hulls of U.S. Navy and commercial ships. Copper-based underwater-hull antifouling treatments have been used since the 19th Century, when the British Navy applied copper sheeting to the bottoms of their sailing ships. Over the last 100 years, the solid copper sheet has been superceded by paints that contain water-soluble copper oxides.

"It's great to be on the forefront of a program that will have such a positive impact on our world's oceans, harbors, and coastal waters."

— Mark Ingle, P.E., NAVSEA program manager

NAVSEA has initiated a program to develop new antifouling coating technologies that release no copper, tin, or other persistent pollutants into the water. To ensure that the new coatings are environmentally acceptable, NAVSEA is working closely with Federal, state, and local environmental regulatory agencies to identify and address key environmental concerns before the Navy fields the products.

NAVSEA's program leverages the efforts of chemical and pharmaceutical manufacturers to develop safe, effective, and organic biocides that contain no hazardous metals and yet can be incorporated into advanced resin chemistry systems to produce an underwater hull coating. The resulting copper-and-tin-free hull coating would prevent marine fouling in a manner similar to the way an antibiotic prevents infection in your body. The antibiotic in the hull paint will prevent the growth of marine organisms, but when released into the surrounding water it will degrade rapidly into nontoxic chemical compounds and break down into nontoxic by-products. NAVSEA believes it can develop effective antifouling paints that contain no hazardous heavy metals within the next 5 years. Preliminary results of NAVSEA's environmental analyses of these new paints appear promising.

NAVSEA plans to demonstrate the efficacy and environmental benefits of the coatings within the next 2 years and develop performance-based requirements for them by 2004. NAVSEA believes that if the copper-free coatings perform as effectively as anticipated, they will soon be adopted by commercial ships, yachts, and vessels of all sizes.

continued on page 12

Training Talk: Liquid Waste

Fleet Training Center Course (CIN)
- OPA Equipment Operation and Maintenance (K-652-2196)

STEP Course (CIN) *from STEP Disk 3, which covers operation of the CHT system in the import, transit and at-sea modes of operation:*
- Shipboard Sewage CHT (A-652-2141)

Guidebook for OPA Systems on Surface Ships (S9593-CP-GYD-010). General information for understanding an OPA system.

PQS
- Oil King/Water King (43116-5G)
- Oil-Spill Control and Removal Equipment (43195-B)
- Shipboard Sewage CHT and Treatment (43199-D)

Videos (PINs)
- Shipboard Oil Pollution Control (805088)
- ET-35N Oil-Content Monitor (OCM) and OPB-10NP Oil-Water Separator (OWS) Operations (806464)
- ET-35N OCM and OPB-10NP OWS Maintenance (806465)
- OMWW0300 OCM Operations and Maintenance (806466)

Training Talk: P2/HAZMAT

NAVOSH Training Guide for Forces Afloat (NAVEDTRA 10074-A) **Lessons 10** (HAZMAT Program) and **11** (HAZMAT Spill Response)

NAVOSHETC Courses (CINs)

- Afloat HAZMAT Coordinator (A-8B-0008)
- Consolidated Hazardous Material Reutilization and Inventory Management Program (CHRIMP)/HAZMAT Inventory Control System (HICS) Technician (A-493-0049)
- Hazardous Material Control and Management (HMC&M) Technician (A-322-2600)
- ***New*** HMC&M Technician MTT (A-322-2601)
- Hazardous Substance Incident Response Management (HSIRM) (A-493-0077)
- HSIRM Refresher (A-493-0083). *Annual refresher training to respond safely and effectively to releases of, or substantial threats of releases of, hazardous substances, complying with Federal, State, and USN environmental regulations, instructions.*
- Shipboard Asbestos Response (A-760-2166). *Training on underway procedures for a ship's 3-person asbestos-response team.*

STEP Courses (CINs)

- Shipboard Asbestos Emergency Response (A-760-2165). *From STEP Disk 1, refresher/enhancement training to personnel who completed the formal NAVOSHETC Shipboard Asbestos Emergency Response Course. Does not replace the formal course. Intro to asbestos hazards, policies, regulations, personal protection and removal equipment, emergency and glove-bag procedures.*
- HAZMAT Control & Management Course (JQR Fundamental 100.7)

PQS

- HAZMAT/Environmental Protection Programs (43528-A)
- Incinerator Operator (43558)

Videos (PINs)

- ***New*** Pollution Prevention Afloat Equipment Program (806477)
- HAZMAT Off-Load (805569)
- HAZMAT Control Afloat (804939)
- HAZMAT Control Afloat for Users (805544)
- HAZMAT Control Afloat for Supervisors (805545)
- Shipboard HAZMAT User's Guide (805357)
- The Shipboard HAZMAT Coordinator (805546)
- Shelf-Life Identification, Management, and Control (805830)

Navy Develops Paints to Improve Environment

continued from page 11

Copper-free antifouling coatings not only will improve the marine environment in the United States, but will ultimately affect the global marine industry. Navies from other countries have expressed an interest in working with NAVSEA to test and field them.

"Copper-free antifouling coatings are the right answer for everyone," said ***Mr. Mark Ingle, P.E.***, the NAVSEA program manager. "It's great to be on the forefront of a program that will have such a positive impact on our world's oceans, harbors, and coastal waters."

Your NAVSEA POC: Mr. Mark Ingle, P.E., Materials Engineering Directorate, NAVSEA, 202.781.3665, Inglemw@navsea.navy.mil

P2A equipment: top-loading aqueous parts washer (left) and paint dispensers

P2 Afloat Installations: Full Speed Ahead

Training and Follow-Up Are Key to Continued Success

NAVSEA's Pollution Prevention Afloat (P2A) equipment-installation program is moving ahead at full speed after successfully installing partial suites of P2A equipment on 13 ships during FY-99 and FY-00 under the "Jump-Start" program. AIT's under the direction of ***Mr. Bud Wright***, NSWCCD-SSES' P2A Installation Manager, began the program's next phase by installing full suites (up to 18 pieces) on various ships.

According to ***Mr. Drew Jackson***, NSWCCD's P2A Implementation Manager, "Jump-Start proved invaluable to the program by helping us make improvements to the equipment and logistics support prior to beginning our full Fleet implementation." The full Fleet implementation phase began in FY-00 and will continue through FY-05. Installation is complete on 15 ships; 28 more will be completed by the end of FY-01. "The initial lag time encountered with equipment procurement and staging, coupled with ship's availability, is being reduced, and installations are beginning to ramp up rapidly during the last half of this FY," Mr. Jackson said. "One thing we quickly discovered is that training is key to making this program successful. If Sailors are not made aware of the advantages of the equipment and trained on how to use it, the program falls apart." Accordingly, NSWCCD is providing complete operational and maintenance training on every ship near or at the end of the installations and also has produced an awareness and training video (see page 17) that augments this training. "Finally, we are institutionalizing the equipment by including its use in Maintenance Requirements Card (MRC) revisions."

"Follow-up is key to the continued improvements within this program," Mr. Jackson emphasized. "If your ship has received P2A equipment, you can anticipate one of our team members contacting you in the near future to see how things are progressing with the new assets. If you have any immediate concerns, don't hesitate to call us. Your input will help improve all future installations."

Your POC for equipment questions and suggestions: P2 Afloat Team, 301.227.5243, DSN 287.5243, JacksonDF@nswccd.navy.mil

Your POC for installation questions and issues: Mr. Bud Wright, 215.897.1430, WrightAC@nswccd.navy.mil

Ships' Aerosol-Can-Puncturing Devices

Disposal of aerosol cans has until now been a problem on ships. NSWCCD's ***Aerosol-Can-Puncturing Device (ACPD)*** project will offer ships excess-HAZMAT disposal savings; a sixfold reduction in space to store empty aerosol cans (ships can safely crush the punctured cans); and punctured cans as recyclable scrap metal, leaving only residue in the collection drum for off-load as excess HAZMAT.

An aircraft carrier generates up to an estimated ***1,000 paint and 2,000 aircraft cleaner spent aerosol cans per month*** when deployed. To manage this bulky and space-consuming waste stream, carriers and other large platforms use commercial and Sailor-made equipment to puncture pressurized cans containing residual HAZMAT and volatile propellant gases. The punctured and empty cans are then crushed in a drum compactor. If left unpunctured, spent cans are stored in 55-gallon drums, overpacks, or tri-walls, and staged for off-load. Once off-loaded for disposal ashore, they constitute a hazardous waste.

A Preliminary Hazard Assessment and a shoreside test conducted at the PWC Recycling Center in Norfolk, VA, found that emitted propellant gases created a potentially combustible atmosphere during puncturing. This exposes the operator to hazardous components and ***volatile organic compounds (VOCs)*** contained in the aerosol cans (solvents and propellants). Follow-on tests demonstrated that adding a portable ventilation system clears the operating area of VOCs. If this configuration is successful when demonstrated on a carrier, ACPD/ventilation systems will be acquired with full logistics support for the Fleet, beginning in FY-02. Meanwhile, a joint CINCLANTFLT/CINCPACFLT Fleet Advisory, CINCLANTFLT DTG 041400Z DEC 00, provides interim safety guidelines for operating existing ACPDs to the Fleet. A positive return on investment was shown aboard a carrier with two ACPDs and one ventilation system, with a break-even point of 2.2 years.

☛ **Your POC:** Ms. Rita Schuh, ACPD Project Engineer, 301.227.5183, DSN 287.5183, schuhrl@nswccd.navy.mil

Shipboard Hazardous Material List Update

In 1998, a group of Navy organizations spearheaded by NSWCCD began the tedious effort to reduce the size of the ***Shipboard Hazardous Material List (SHML)*** with a two-phased program. Phase One reduced the number of authorized materials from 7,000 to 3,500 as of September 2000. The Navy accomplished this by reviewing maintenance and technical documentation, authorizing only those materials with valid shipboard requirements, and eliminating or prohibiting all others.

A ***Material Management Indicator (MMI)*** was established to reduce the workload associated with centrally managing HAZMAT. Materials categorized as minimal risk to the end user, i.e., common household cleaning products and common consumer commodities, now have an MMI code, which makes their centralized management optional.

Phase Two Update

Phase Two began in September 2000 with the objective of reducing the SHML by another 15 percent. The Phase Two approach: evaluate specifications by material category to determine if one specification may satisfy other applications, thereby eliminating redundant specifications and associated materials; and add safety and health requirements to existing specifications, i.e., MILSPECs and Commercial Item Descriptions (CIDs), to ensure that only the safest products will qualify. NSWCCD-SSES Code 631 evaluated about 400 adhesive/sealants and 90 greases on the SHML. Seventeen grease specifications and six adhesive specifications are targeted for revisions to reflect environmental, safety, and health considerations.

Standardized Materials

Current efforts include the evaluation of authorized lubricants and corrosion-preventive compounds listed on the SHML. This phase will also focus on developing new or revising existing CIDs or Technical Purchase Descriptions (TPDs) to standardize general-cleaning materials for specific Fleet applications. Ships carry many different cleaning products for routine maintenance and shipboard sanitation that can vary in both cleaning efficiency and the degree of safety and health precautions necessary for their use.

Better Safety, Health, and Environment

To improve safety, health, and environmental aspects of the products without compromising the mission, and eliminate unnecessary cleaning materials from the SHML, the Navy is addressing a disinfectant-detergent for food-contact surfaces and a disinfectant-detergent for porcelain, vitreous plumbing fixtures (heads and urinals). Future plans are to address a general-purpose, ready-to-use cleaner; a light-to-medium-duty cleaner; a heavy-duty cleaner used for bulkheads and habitability spaces; and a heavy-duty cleaner for workshops and machinery spaces.

Phase Two Payoffs

Phase Two of the SHML-reduction effort will accomplish the following:

- **Reduced PPE required to conduct maintenance operations and reduced work for the sailor;**
- **Reduced variability of product performance from ship to ship;**
- **No more redundancy in ship's stock system;**
- **Identification of the required material for specific applications;**
- **Reduced workload for the HAZMIN Center Operator;**
- **A more user-friendly SHML; and**
- **A specification/CID for unique applications by which future products will be compared for a specific ship requirement.**

☛ **Your POC:** Mr. Bruce Lundy, NSWCCD-SSES Code 631, 215.897.7640, lundyb@nswccd.navy.mil

Submarine Corner

Coming Soon to Your Boat: Submarine Hazardous Material Inventory and Management System (SHIMS)

To improve the Hazardous-Material Control and Management (HMC&M) program aboard submarines, commander Submarine Forces, Atlantic and Pacific (COMSUBLANT/PAC) and NAVSEA are developing the ***Submarine Hazardous Material Inventory and Management System (SHIMS)***. The goal: provide a consolidated approach to improve control of hazardous material (HM) on submarines, reduce overall HM requirements, reduce HM life-cycle costs, enhance crew health and safety, and improve operational readiness.

The effort began in FY-99 with a deckplate assessment of the current state of HMC&M program implementation aboard submarines. Submarine Supply Department personnel from both attack (SSN) and ballistic missile (SSBN) platforms identified specific needs. One key finding was that submarines were using various methods of maintaining HM inventories, ranging from paper logs and spreadsheets to database applications. Moreover, submariners expressed difficulty in maintaining control and accountability of HM stored in various workcenters and lockers throughout the submarine.

NSWCCD Code 632 and NAVSEA 92TE developed SHIMS as a comprehensive inventory and management software tool that can be installed to the ship's local area network (LAN) so that multiple users can view and update HM inventories simultaneously. Key features:

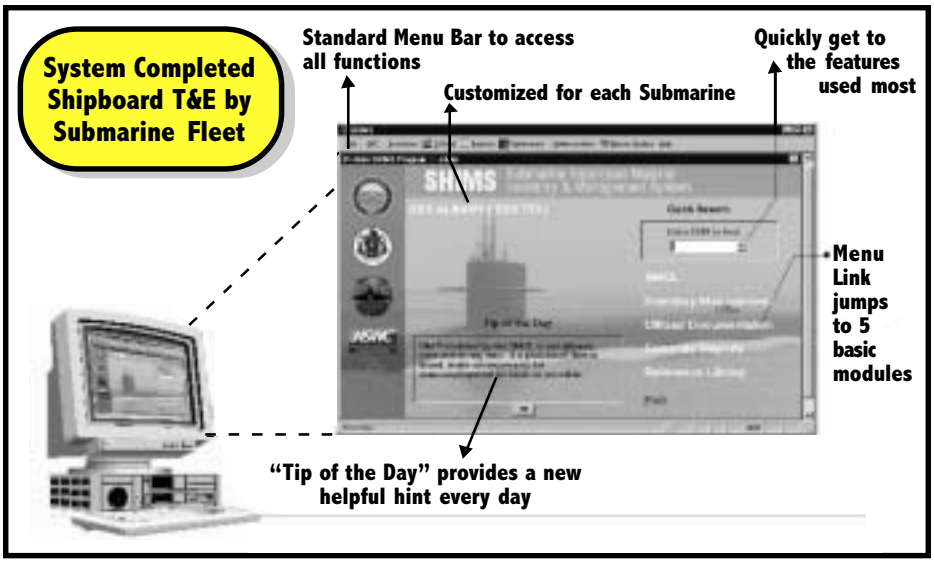
- **Submarine Material Control List (SMCL) screening for procurement**
- **Inventory management and tracking by HM type, quantity, and location throughout the submarine**
- **Automated reporting features including off-load documentation**
- **On-line access to policy and guidance documents and references**
- **Simplified compliance with atmosphere contaminant logging and tagging requirements**
- **Ready access to Material Safety Data Sheet (MSDS) information**

Beginning in FY-00, NSWCCD conducted shipboard test and evaluation (T&E) of SHIMS on several platforms, and participant feedback overwhelmingly validated its utility. One SHIMS user said it was "easy to manipulate and makes the HMC&M program a whole lot easier to implement, audit, and administer." The software, compatible with the Integrated Shipboard Network System (ISNS), is now on SPAWAR's Preferred Product List (PPL) and System/Subsystem Interface List (SSIL).

▲USS *Maryland* crew member using SHIMS

During FY-01, NSWCCD is exploring ways to integrate SHIMS functionality into the new Relational Supply (R-Supply) system. Based on the successful results of underway T&E, NSWCCD began transitioning SHIMS to Fleetwide implementation in March 2001. Major initiatives include conducting Training Workshop and Implementation Visits at six submarine homeports, designating and providing training for on-site SHIMS Regional Coordinators at each homeport; and integrating formal SHIMS training into Navy Submarine Supply Department curricula.

Training, provided by a "Tiger Team," will include a workshop for appropriate shipboard personnel (Supply Officers and Leading Storekeepers) and one-on-one training to submarine crews during an Implementation Visit. NSWCCD will introduce SHIMS training into the Navy's Supply Officer Department Head Course, which will be integrated into a new 3-week course at Navy Supply Corps School in Athens, GA.



Your NAVSEA POC: Mr. David Cartwright, NAVSEA 92TE, cartwrightda@navsea.navy.mil, 202.781.1183

Your NSWCCD POC: Mr. Kiet Ung, NSWCCD Code 632, UngKT@nswccd.navy.mil, 301.227.5235

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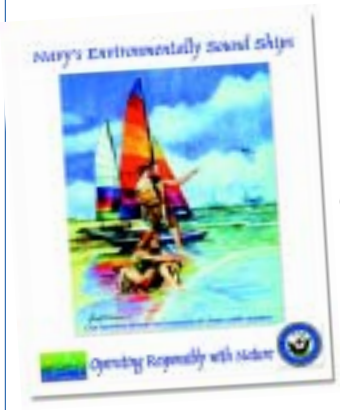
Blue Heron Theme

Scratchboard features Navy minesweeper in Texas coastal waters

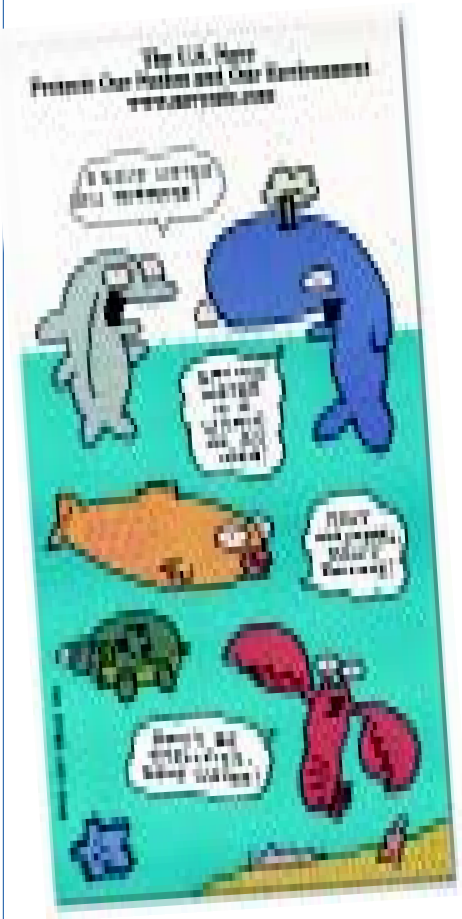
▲**Available in 11x14" and 26x28"**

Beach Theme

Watercolor of Navy aircraft carrier and family enjoying a clean day at the beach

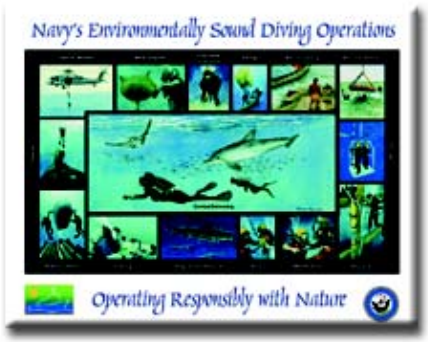


▲**Available in 11x14" and 24x32"**



Divers Theme

Watercolor features Navy diving operations



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◀**"The U.S. Navy Protects Our Nation and Our Environment." To obtain your free sea-creatures stickers, call or e-mail the Clearinghouse at 703.416.1132, posters@navyseic.com!**

Stewardship

Congratulations! Ships Win CNO, SECNAV Environmental Awards

CONGRATULATIONS TO THE FY-00 environmental-award winning individuals, teams, ships, and installations recognized for their exceptional environmental stewardship! The winners of the CNO Environmental Awards for ships are as follows:

Environmental Quality, Large Ship
- USS *Arctic* (AOE-8)
- USS *Bonhomme Richard* (LHD-6)
- USS *Carl Vinson* (CVN-70)
- Honorable mentions: USS *Abraham Lincoln* (CVN-72) and USS *Harry S. Truman* (CVN-75)

Environmental Quality, Small Ship
- USS *Anzio* (CG-68)
- USS *Curts* (FFG-38)
- USS *San Jacinto* (CG-56)

Recipients of the FY-00 SECNAV ship environmental awards are the following:

Environmental Quality, Large Ship
- USS *Carl Vinson* (CVN-70)

Environmental Quality, Small Ship
- USS *San Jacinto* (CG-56)

The CNO awards ceremony will be held 2 May 2001 at 0900 at the Navy Memorial, Washington, DC. The SECNAV ceremony will follow at 1100.

To learn more about how to nominate someone for next year for any of the six categories, turn to page 16!

AEPC Reference Library CD Revised

Since the AEPC Reference Library CD-ROM was first distributed in January 2000 to students in NAVOSHENVTRACEN's AEPC course, it has gone through several revisions. The latest is Revision D, CIN A-4J-0021.

The original edition includes:

- **Resources**
- **Web Pages**
- **OPNAVINST 5090.1B, CH 2:** Environmental and Natural Resources Program Manual, Afloat Excerpts
- **ODS Advisories**
- **OPNAVINST 5100.19C, CH 2:** NAVOSH Program Manual for Forces Afloat, Afloat Excerpts
- **HAZMAT Messages**
- **Afloat Medical Waste Management Guide**
- **Shipboard Solid Waste Equipment Management Guide**
- **Solid Waste Sorting and Processing Charts**
- **Solid Waste Messages and Advisories**
- **OPA Messages**
- **Guidebook for OPA Systems on Surface Ships**
- **Marine Mammals Fact Sheet**
- **Sample POD Notes and Articles**
- **Sample Graphics**
- **CNO Environmental Award Winners, FY-1998 Award Packages**
- **Videos:**
  - Your Ship, the Environment, and You
  - War on Pollution: The Navy's New Weapon to Fight Plastics Pollution at Sea
  - War on Pollution II: Pulpers & Shredders: The Navy's Newest Weapons Fight Solid Waste Pollution at Sea

Updates to Revision D include:

- **OPNAVINST 5090.1B, CH 2 updates**
- **CNO WASH DC//N4 131732Z JUN 00** (AEPC/Designation and Training Requirement)
- **CNO WASH DC//N45 020210Z DEC 00** (Non-Plastic Solid Waste Discharges at Sea for Ships Without Navy /Pulper-Shredder Installations)
- **Revised HAZMAT Compatibility Storage Diagram and Incompatible Materials Chart**
- **Draft Oil-Spill Contingency Plan**

☛ **Your POC for the latest AEPC Reference Library CD:** Ms. Deborah Ruttenberg, 703.416.1132, Deborah@navyseic.com

Call for Awards! Nominate a Person or Group Deserving an Environmental Award

Navy's New Criteria, Deadlines

Know a person or group who deserves a Navy Environmental award? According to OPNAVINST5090-.1B CH 2, Appendix D, you must submit your nominations for the 2002 ship awards by ***1 December 2001***. But there have been some changes to the DOD awards program. For details, visit the CNO N45 Web Site, ***http://web.dandp.com/n45/docs.html***, a great resource for anyone preparing a nomination. For the 1999 winners, visit ***http://web.dandp.com/n45/99awards.html***. To see which ships won the CNO and NAVSEA Environmental Awards for 2000, turn to page ***15***!

☛ **Your POC for awards-program questions:** Ms. Easter Thompson, N45P1, 703.604.5426, DSN 664.5426, thompson.easter@hq.navy.mil

Navy Earth Day 2001 Will Be Fun Around the Nation

continued from page *3*

◀ **The SEIC's Mr. Pete Mullenhard helps visitors at the Environmentally Sound Ships exhibit at Navy Earth Day 2000 show**

Events in Your Neck of the Woods!

Can't come to DC? No problem. Here's how you can get involved in or attend Navy Earth Day events nearer to you!

★ **Norfolk, VA.** Volunteer with other local military and civil service employees for Earth Action Projects until 21 April. **POCs:** Mr. John Deuel or Ms. Lucille Ring, 757.441.1347, or *www.hrtide.com/community/groups/ED2001/Projects_to_particip.html*. The local event, 22 April at Town Point Park, will have exhibits, food, entertainment, and activities for all ages.

Jacksonville, FL. CNO N45 will support Navy Earth Day with EQ Pelican and host booths at Earth Day Jacksonville's Ecology Fair at The Jacksonville Landing on 21 April. **POCs:** Ms. Janice Lowe, 904.353.1188 x7020; Ms. Sherri Akens, 904.542.5380. And NAS Jacksonville's semiannual Shoreline Cleanup is 19 April. **POC:** Ms. Wendy Wassell, 904.542.2717 x114.

★ **San Diego, CA.** The Navy's "Electric Vehicle Parade" during San Diego's 12th annual EarthFair in Balboa Park is on 22 April. The Navy will sponsor several booths at this annual event, which draws 60,000 people to exhibits, hundreds of booths, entertainment, food, and activities for kids. Visit *www.earthdayweb.org/SDEW_EarthFair.html*. Or participate in one of the three Earth Day 5K Fun Runs on 18 April at NAS North Island, NAVSTA San Diego, or SUBASE San Diego, and get a "Navy Recycles" t-shirt! **POC:** Mr. Peter Kennedy, Kennedy.Peter.A@asw.cnrsw.navy.mil.

★ **Pearl Harbor, HI.** Commander Navy Region Hawaii partners with Hawaiian Electric to celebrate Earth Day. Navy Sailors and local school children will plant native Hawaiian trees and learn about the history of these special trees. **POC:** Mr. Bill Roome, 808.473.2926, Roomew@hawaii.navy.mil.

☛ **Your Navy Earth Day POC:** Mr. Ken Hess, 703.418.3417, Hess.Kenneth@hq.navy.mil

☛ **For other Earth Day events,** visit *www.earthday.org*

Alphabet Soup for Non-Navy Types

What do all those acronyms mean? A quick-reference glossary:

AC&R: Air conditioning and refrigeration
AEPC: Afloat Environmental Protection Coordinator
AIT: Alteration Installation Team
ASNE: American Society of Naval Engineers
ATD: Advanced Technology Demonstration
BUMED: Bureau of Medicine and Surgery
CFC: Chlorofluorocarbon
CNO: Chief of Naval Operations
COMNAVSUBLANT/PAC: Commander Submarine Forces, Atlantic/Pacific
CV; CVN: Aircraft carrier
DOD: Department of Defense
DON: Department of the Navy
DSN: Defense Switched Network
EPA: Environmental Protection Agency
ESS-21: Environmentally Sound Ship of the 21st Century
FTSC: Fleet Technical Support Center
FY: Fiscal year
HFC: Hydrofluorocarbon
HAZMAT; HM: Hazardous material (s)
INSURV: Board of Survey and Inspection
LCDR: Lieutenant Commander
LNTFLT: Atlantic Fleet
MACHALT: Machinery Alteration
MILSPEC: Military specification
MRC: Maintenance Requirement Card
MSC: Military Sealift Command
MSG: Message
NAVAIR: Naval Air Systems Command
NAVFAC: Naval Facilities Engineering Command
NAVICP: Naval Inventory Control Point
NAVOSH: Naval Occupational Safety and Health
NAVOSHENVTRACEN; NAVOSHETC: NAVOSH Environmental Training Center
NAVSEA: Naval Sea Systems Command
NAVSUP: Naval Supply Systems Command
NFESC: Naval Facilities Engineering Services Ctr.
NSN: National Stock Number
NSWC: Naval Surface Warfare Center
NSWCCD: NSWC, Carderock Division
ODS: Ozone-depleting substance
OPNAV: Operations Navy
OPNAVINST: OPNAV Instruction
PACFLT: Pacific Fleet
P2A: Pollution Prevention Afloat
PMS: Planned Maintenance System
POC: Point of contact
PPE: Personal protective equipment
PQS: Personnel Qualification Standards
PWP: Plastics waste processor
R&D: Research and development
SECNAV: Secretary of the Navy
SHIPALT: Ship Alteration
SSES: Ship Systems Engineering Station
SYSCOM: Systems Command
STEP: Shipboard Training Enhancement Program
T&E: Test and Evaluation
TYCOM: Type Commanders
UNDS: Uniform National Discharge Standards
USS: United States Ship

Spotlight on CNO (N452)'s Mr. Kurt Neff, and Ms. Terri Mosteller, a NAVOSHENVTRACEN Star!

Mr. Kurt Neff, CNO (N452)

Ms. Terri Mosteller, NAVOSHETC

MR. KURT NEFF, ON ASSIGNMENT FROM the NAVSEA Environmental Programs Division (SEA 05L1), works as a Senior Engineer for the Ship & Air Systems Branch of the Environmental Protection, Safety, and Occupational Health Division of CNO (N452). He is responsible for developing policy, operational requirements, and program guidance and for supporting the resource-and-assessment sponsorship governing RDT&E, international, P2 Afloat, and HMC&M programs.

Prior to joining SEA 05L1, Mr. Neff was an electrical engineer in the Power and Controls Field Engineering Branch at Norfolk Naval Shipyard. He came to NAVSEA first as a systems engineer for the Surface Ship Directorate (SEA 91) to work on the solid-waste program, then began work in 1997 as the installation/integration manager for solid-waste processing equipment at SEA 05L1, where he has since served as systems engineer and assistant program manager for P2A, HAZMAT afloat, and non-oily wastewater.

Mr. Neff has a Bachelor's degree in Electrical Engineering from Virginia Polytechnic Institute and State University (Virginia Tech).

ONE OF THE NAVOSHETC STARS WHO can help you with environmental training (see cover story, "Environmental-Management Information and Training: Keys to Your Ship's Success!") is ***Ms. Terri Mosteller***, Course Supervisor for the Afloat Environmental Protection Coordinator (AEPC), Asbestos Management Planner, and other courses. Ms. Mosteller is also an Instructor for Shipboard Asbestos Response, Respiratory Protection Manager courses, and more. In addition, she is a representative on the Hazardous Material Afloat Program and Environmental Protection and Natural Resources Program Afloat Working Group for her command, the Public Affairs Officer, the Clean the Bay Day Liaison, and the Recycling Program Manager.

Ms. Mosteller has a B.A. in Science from Pennsylvania State University and will graduate in 2002 with an M.S. in Secondary Education, with a concentration in Instructional Technology, from Old Dominion University.

New P2A Video for Training, Awareness!

NSWCCD recently completed a new P2A-equipment video " (PIN 806466). When ships receive their P2A equipment installations, they will also receive a copy.

For more copies, visit the DAVIS Website:
http://dodimagery.afis.osd.mil/dodimagery/davis

Your Points of Contact for Navy Environmental Issues

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Mark These Dates...

18 April 2001: Earth Day Celebration at the Navy Memorial, Washington, DC. Visit ***http://web.dandp.com/n45/EarthDay2001.html*** or go to Earthday.net: ***www.earthday.net***, or contact Mr. Ken Hess, 703.418.3417, Hess.Kenneth@hq.navy.mil.

24–26 April 2001: Halon Options Technical Working Conference, Albuquerque, NM. Visit ***http://nmeri.unm.edu/cget/confinfo.htm*** or contact Ms. Deborah G. Cole, 505.272.7215, dcole@nmeri.unm.edu.

30 April–2 May 2001: ASNE Day, "Technology Insertion in the 21st Century Fleet," Hyatt Regency Crystal City, Arlington, VA. Visit ***www.navalengineers.org/ASNE2001/index.htm*** or call 703.836.6727

15–17 May 2001: Navy/Marine Corps Clean Air Act Conference, Adam's Mark Hotel, Jacksonville, FL. Visit ***http://home.ttnus.com/CleanAir/index.html*** or contact Ms. Rane Wagner, wagnerr@ttnus.com, 412.921.7090 x8530.

31 May–1 June 2001: ASNE/SNAME Marine Environmental Engineering Technology Symposium (MEETS) 2001, Doubletree Hotel (Crystal City), Arlington, VA. Visit ***www.navalengineers.org/ENV01/MEETS.htm***.

18–20 June 2001: Fourth Tri-Service Environmental Technology Symposium, U.S. Army Environmental Center is hosting the , Town and Country Hotel, San Diego, CA. Visit ***www.ets-2001.com/*** or call 757.357.4011.

19–21 June 2001: Navy P2 Conference, Hilton Crystal City at National Airport, Arlington, VA. Visit ***www.dandp.com/p2/*** or contact Ms. Kathi Jones, ESC423, 805.982.4899, DSN prefix 551, joneskf@nfesc.navy.mil.

20–23 August 2001: Annual Joint Service Pollution Prevention/Hazardous Waste Conference, San Antonio, TX. Visit ***www.p2-hwmconference.com/*** or contact Ms. Alma Castillo or Ms. Laurie Grams, 210.212.6161.

2001: Fleet Environmental Conference. A date for this year's Fleet/NAVSEA Environmental Conference has not yet been selected. Watch for a Naval message by early summer announcing the date or call the Clearinghouse, 703.416.1132, for an update.

☛ Please call or e-mail the Clearinghouse for more information. Also check out the calendar at DENIX, ***www.denix.osd.mil/denix/Public/Calendar/display.cgi***

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What Is the Clearinghouse?

The purpose of the **Navy Shipboard Environmental Information Clearinghouse** is to provide one-stop shopping for the Fleet and inform the Navy community on all shipboard environmental issues: policy, people, R&D, ozone-depleting substances, solid waste, liquid waste, hazardous materials, Uniform National Discharge Standards, and Pollution Prevention Afloat (P2A) success stories. Our extensive resources include *but are not limited to* the following:

- **Policy and Regulations.** Copies of Navy advisories, directives, instructions, and regulations.
- **Status of Shipboard Environmental Equipment Installations.** Updates on the latest technology on board ships.
- **Vendor Information.** Prices; availability; product information (material data safety data sheets, technical data sheets, and Chemical Abstract Service (CAS) numbers); technical reports; and user experience.
- **Alternative Chemicals.** Facts on existing and newly developed alternatives or processes including vendor, toxicity, and application data.
- **Status of Military Documents Requiring Modifications.** Specifications, maintenance requirement cards, technical manuals, etc.
- **Miscellaneous.** EPA technician-certification programs; information from industry and professional organizations; EPA rules; more.

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